

REMARKS

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

I. Power of Attorney

Attached hereto is a power of attorney dated December 4, 2006 authorizing this firm to continue the prosecution of the application. Accordingly, it is respectfully submitted that the undersigned is an authorized representative of the inventors.

II. New Claims 22-41

Claims 1-21 have been replaced with claims 22-41 to better define the scope of the invention embodied in the above-identified application. It is respectfully submitted that the claims 22-41 define patentable invention over the cited art.

Claim 22 recites a system for transmitting and receiving time division multiplexer (TDM) control data in a time division multiplexer (TDM) communication network. A single master control source provides the TDM control data. At least one slave TDM multiplexer within the TDM communications network is operative to produce a TDM signal comprising a plurality of fixed-length, recurrent time-slots in each frame

that are allocated to respective channels associated with the TDM signal.

A given slave TDM multiplexor includes a transmitter component that accepts the TDM control data from the master control source and inserts the TDM control data into at least a portion of one of the channels associated with the TDM signal such that the control data is transmitted in a recurring time slot in each frame in which control data is present. A receiver component extracts the TDM control data from the TDM signal and passes the TDM control data to a local processor. A bridging component is operative to relay the TDM control data independently of a local control processor associated with the TDM multiplexer.

It is respectfully submitted that the subject matter of claim 22 is incorporated into the specification in a manner recognizable to one skilled in the art. Specifically, one skilled in the art would recognize that a time division multiplexing arrangement produces a plurality of fixed-length, recurrent time-slots in each frame that are allocated to respective channels associated with the TDM signal. See, e.g., Eric Anderlind, *Resource Allocation in Multi-Service Wireless Access Networks*, §2.1, Royal Institute of Technology (Stockholm, Sweden), published October 1997 and available at <http://www.sigmobile.org/phd/9697/theses/anderlind.pdf>; See

also [http://www.reference.com/browse/wiki/Time-division multiplexing](http://www.reference.com/browse/wiki/Time-division_multiplexing).

It is further submitted that claim 22 defines patentable invention over U.S. Patent No. 6,108,346 to Doucette (hereinafter: Doucette) because Doucette does not teach or suggest carrying control data in an information channel in a time division multiplex system. Doucette describes a token ring arrangement that uses a series of tokens and control characters to moderate access among a plurality of modules. Specifically, control characters are used to indicate the start of a window, the end of synchronous data transfer and the end of a window. Tokens are used to signify which module presently has transmission rights during a given window.

In Doucette, the length of each window is fixed, but the portion of the window assigned to each source connected with a given module is variable with priority given to data from synchronous (e.g., telephone) data. In the time division multiplexing (TDM) system recited in claim 22 and described in the present application, the TDM signal comprises a plurality of recurring, fixed length time slots that reoccur in the same position every frame. Control data is associated with one or more channels, such that the control data is coded into one of the fixed length time slots. Doucette does not teach the use of a TDM system with fixed, recurring time slots representing

a plurality of data channels, and thus cannot teach incorporating TDM control data into channels associated with a TDM signal such that the control data is transmitted in a recurring time slot in each frame in which control data is present. The other cited art does not remedy this deficiency. Accordingly, it is respectfully submitted that claim 22 is novel over Doucette.

It is respectfully submitted that the tokens and control characters utilized in Doucette, while necessary in the token ring system of Doucette, would not be desirable in a time division multiplexer network that utilizes a fixed slotting arrangement. Similarly, the Doucette system is essentially a peer-to-peer arrangement other than the timing and framing information provided by the framing control (See Col. 6, lines 39-43), such that no need exists to pass any other control data between modules. Accordingly, one skilled in the art, presented with the teachings of the Doucette, would not seek to modify the Doucette system to produce the time division multiplexer system recited in claim 22. It is thus respectfully submitted that claim 22 defines patentable invention over Doucette.

Claim 29 recites a system for transmitting and receiving time division multiplexer (TDM) control data in a time division multiplexer (TDM) communication network. In

claim 29, each of a plurality of slave TDM multiplexers include a bridging component for relaying TDM control data to a next TDM multiplexer. The bridging component includes at least one buffer that regulates the flow of data through the bridging component such that synchronization between the incoming control data and the outgoing control data by a local processor is unnecessary.

It is respectfully submitted that Doucette does not teach or suggest the use of a bridging component to relay control data between multiplexers without synchronization by a local processor. In Doucette, each byte, including tokens and control characters, is received at a module, copied internally, and passed onto the next module only if appropriate. See Doucette, Col. 3, lines 34-42. Accordingly, every character must be processed at the module before it can be passed to the next module. There is no teaching or suggestion of relaying the information independently of the local processor. The other cited art does not remedy this deficiency. It is thus respectfully submitted that claim 29 defines patentable invention over the cited art.

Claim 36 recites a method for distributing time division multiplexer (TDM) control data within a time division multiplexing (TDM) communications network comprising a plurality of TDM multiplexers. TDM control data, comprising

at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network, is generated at a master control source. The TDM control data is received at a first TDM multiplexer. At least a portion of the received control data is inserted into a TDM signal at the first TDM multiplexer. The TDM control data is extracted from the TDM signal at a second TDM multiplexer and the TDM control data is provided to a TDM multiplexer control processor associated with the second TDM multiplexer.

It is respectfully submitted that the subject matter of claim 36 is incorporated into the specification in a manner recognizable to one skilled in the art. Specifically, the specification notes that a synchronous data link control (SDLC) protocol can be utilized in the communications network, and one skilled in the art will appreciate that this protocol includes supervisory data that can include configuration data and status requests. For example, this control data is discussed in Cisco's online documentation of the SDLC protocol, available at http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/sdlcetc.htm#wp1020599.

It is respectfully submitted that Doucette does not teach or suggest inserting configuration data and status information into a time division multiplexed signal. As was discussed

previously, Doucette utilizes a simple token-ring scheme with control characters used to denote the boundaries of a window and the end of synchronous data and tokens used to arbitrate transmitting rights among the plurality of modules. Unlike the timing characters discussed in Doucette, the status and configuration data recited in claim 36 would not ordinarily be carried in the signal passed between multiplexers, but rather provided to each multiplexer at a separate control port. Accordingly, it is respectfully submitted that one skilled in the art confronted with Doucette would not be lead to incorporate status and configuration data into a TDM signal. The other cited art does not remedy this deficiency. Accordingly, it is respectfully submitted that claim 36 defines patentable invention over the cited art.

Claims 23-28, 30-35, and 37-41 each depend, either directly or indirectly, from one of claims 22, 29, and 36, and are allowable for at least the reasons set forth with respect to their respective base claims.

In light of the amendment and remarks above, it is submitted that claims 22-41 are allowable over the cited art. Allowance of the subject application is respectfully requested.

Please charge any deficiency or credit any overpayment in
the fees for this amendment to our Deposit Account
No. 20-0090.

Respectfully submitted,



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